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Prevalence of Rheumatic Heart Disease in Different Age Groups in Area of Hospital Population Faisalabad

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ABSTRACT

The present study was carried out at the Faisalabad Institute of Cardiology. It comprised 500 patients. The study was planned to observe the prevalence, incidence, and progression of Rheumatic heart disease (RHD). The study was performed through a standardized questionnaire after the approval of a bioethical committee of Government college university Faisalabad. The chi-square test, percentages, standard error, and mean were applied to analyze the data. The mean age at presentation of rheumatic heart disease patients was 26.34±1.23 years. It was 27.5+1.75 & 21+1.02 years in case of females and male, respectively. The mean age at diagnosis of patients with rheumatic heart disease was 24.72 ±1.90 in 500 subjects. The maximum number of rheumatic heart disease patients were observed in the age group 20-29 (39.4%).

Keywords: Epidemiological study, Rheumatic heart disease, Patients Age, Faisalabad

INTRODUCTION

In low economic status and in middle economic countries Rheumatic Heart Disease (RHD) is the main cause for non-communicable diseases and actsas a major cause of mortality. Around 250000 premature deaths occur due to this disease all over the world. This disease has been removed from the high-income countries but still, there are more than three-quarters of children who are endemic to the area of RHD. Amongst children between the ages of10-14 years RHD is one of the main causes of cardiovascular disability (Marijonet al., 2012). People under the age of 25 mostly encountered from RHD which is a common cardiovascular disease. Many cases of morbidity and deaths are linked with this disease. Encounters with the ARF stimulate the RHD that results in the damage of heart valves and other complications (Nulu etal., 2017). This disease does not carry only symptomatic forms but sometimes its appearance remains asymptomatic. So, it is necessary to perform a sensitive detection to diagnose this disease. Nowadays, echocardiography is used frequently to detect the presence of this disease (Rémond et al., 2015). One of most common cardiovascular disease is RHD. Presents the world widely and affect people with age below 25. RHD cause potential kind of morbidity and also lead toward deaths (Nulu et al.,2017). Valvular lesions caused by, ARF. This occurs after the recurrence either clinically or sub clinically. All cases with symptoms are not guaranteed to be diagnosed. ARF patients sometimes do not develop symptoms (Melka et al., 1996). Therefore, sensitive detection is required to reach the control of RHD in population study level. In these days, echocardiography of high resonance proved as helpful tool to cure RHD (Dougherty et al., 2017).

Among the children, young adults and adolescent of developing countries the major burden of rheumatic heart disease is present (Backes et al., 2013). About 15.6 million people has been calculated that are suffering from the RHD. Annually, 470000 new cases with rheumatic fever comes under consideration (Marijon et al., 2012). The number of deaths with rheumatic heart disease and RF that appear annually is 233000. Global frequency of RF is estimated as 300000-350000 each year. The decrease has been seen about of 47.8% in the age standardized mortality due to the RHD by the year 1990 to 2015 (Watkins et al., 2017). The improved living conditions, better clinical conditions and advancement in the medical care of developed countries has overcome the occurrence of RHD (Seckeler et al., 2011). RF occur in genetically susceptible people that shows autoimmune response towards the rheumatogenic strains, of group A beta hemolytic streptococcus bacteria (Martin et al., 2015). This condition leads toward the initiation of more complicated rheumatic heart disease that destroy the heart valves and damage their proper functioning. Major kind of mortality in developing countries cause by the presence of RHD in endemic area (Camara et al., 2016).The epidemiological study of rheumatic heart disease patients in different age groups in the hospital population of Faisalabad is not studied yet therefore we investigate it in the present study.

MATERIALS AND METHODS

Research was carried out in the Faisalabad institute of cardiology after the permission of medical superintendent of the hospital. Data had been collected by using the standardized questionnaire data sheet (specimen attached), and by interviewing, the patients, and their relatives. Data sheet was comprised the information related to the patient life style, health status and symptoms of the disease. The carried data provided the information about the life style of patient included the diet, living style of the patient and the residence location of the patient and all about its activities. Health profile of the patient was contained the correct diagnosis about the disease and the time or age of the patient at the time of diagnosis. We collected the information about the background of the patient.

Statistical Analysis

Statistical analysis was performed by the IBM SPSS statistic software and Microsoft excel to calculate the percentages, mean, standard errors and chi square test.

RESULTS AND DISCUSSION

The mean± SEM age at present of rheumatic heart disease patients was26.34±1.23 years. In case of male patients, the mean age at present was21 ±1.02 years and the mean age at present of female patients was 27.5± 1.75 years. In male patients the minimum age is 17 years and maximum was 46 years while in females the minimum age was 18 years and maximum was 53 years. The distribution of mean age at present showed a significant difference ($p< 0.0001$).

The mean± SEM age at diagnosis of patients in rheumatic heart disease was 24.72±1.90 in 500 subjects. In male patients the mean age at diagnosis was 18.5±1.53while in female cases the mean age at diagnosis was 25.5±1.67. In males the minimum age at diagnosis was 14 and maximum age was 39. In female cases the minimum age at diagnosis was 21 and maximum age at diagnosis was 52. The distribution of mean age at diagnosis was significantly different ($p<0.0001$).

The patients were distributed among five age intervals started from 10-19 to 50-59 years. Maximum number of rheumatic heart disease patients were observed in age group 20-29 (39.4%). Most of the male patients were observed in age group of 10-19 (22%). Females were mostly observed in age group of 20-29 (21.8%). ($p<0.0001$).The parameter regarding the age interval of the patients or the age interval that was more vulnerable to the attack of rheumatic heart disease represented that rheumatic heart disease can more easily attack in the age of < 25 years. This result is similar to the result of (Islam et al., 2016) who stated that rheumatic heart disease and also rheumatic fever is more common in the young people below the age of 25 years.

Table 1.Percentage distribution of age **in rheumatic heart disease patients.**

Sr. No	Gender	Numbers of Patients	Mean age at Diagnosis	Mean age at Present
1	Males	230	18.5±1.53	21 ±1.02
2	Females	270	25.5±1.67	27.5± 1.75
3	Sex Combined	500	24.72±1.90	26.34 ±1.23

($\chi^2 = 170.5$), ($p< 0.0001$).

Table 2. Distribution of rheumatic heart disease patients in different age groups.

Sr. No	Age interval	Male	Percentage	Female	Percentage	Sex combined	Percentage
1	10-19	123	24.6	17	3.4	140	28
2	20-29	75	15	109	21.8	184	36.8
3	30-39	27	5.4	94	18.8	121	24.2
4	40-49	5	1	44	8.8	49	9.8
5	50-59	0	0	6	1.2	6	1.2
	Total	230	46%	270	54%	500	100%

(χ^2=134.5), ($p<0.0001$).

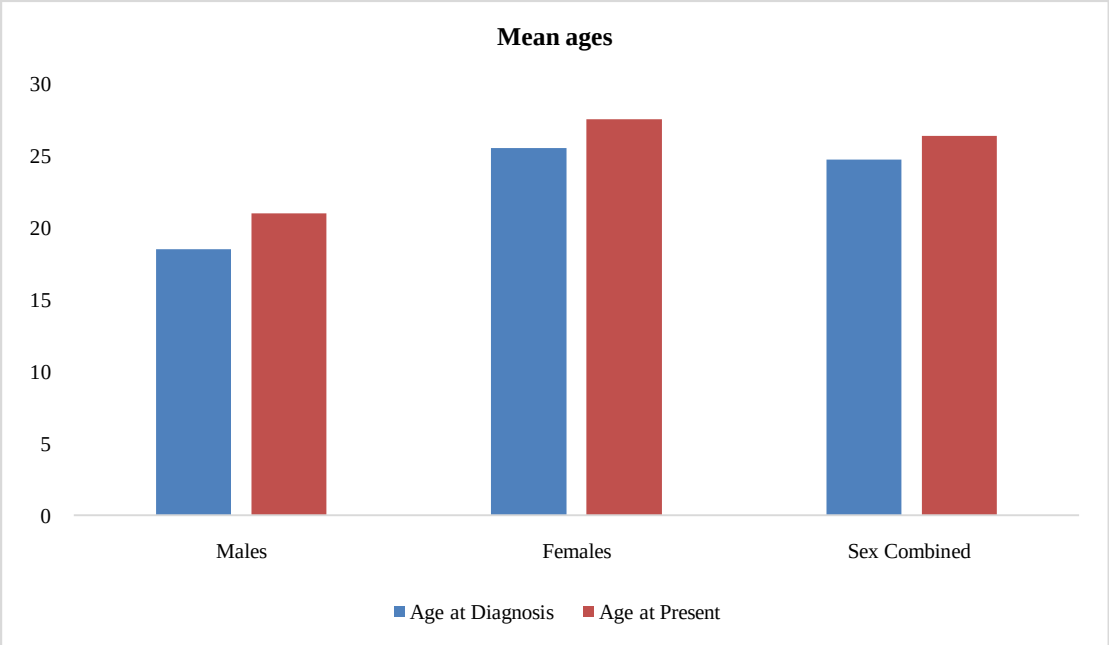

Figure 1. Mean ages in rheumatic heart disease patients

Conclusions

It was concluded that the most susceptible age which has been found to encounter by rheumatic heart disease is below than 25.

Recommendations

The one of the basic needs to prevent rheumatic heart disease to aware the people about this disease. Awareness should be improved both at physician and patient's level. Proper medical facilities should be provided to diagnose the disease on early stage. The government of Pakistan should strengthen its economy so the poverty could overcome Jobs should be provided to the people as they can nourish their families properly. Moreover, routine checkup should be applied on monthly or yearly basis in the below ages.

Conflict of Interest

There is no conflict of interest.

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